Amendments to the Claims:

This listing of claims will replace all prior versions, and listings of claims in the application:

Listing of Claims:

1. (Previously Presented) A method of treating a stiffened blood vessel, said method comprising at least substantially encasing a stiffened portion of said blood vessel with an elastic membrane formed of biocompatible material, such that said membrane engages said stiffened portion of said blood vessel to thereby reduce the external diameter of said stiffened portion of said blood vessel, passively carry at least a portion of blood pressure loads acting on said blood vessel throughout systole and diastole and reduce the effective stiffness of said stiffened portion of said blood vessel, said elastic membrane having a stiffness less than the stiffness of said stiffened portion of said blood vessel.

2. (Original) The method of claim 1 wherein said blood vessel is an artery.

3. (Original) The method of claim 2 wherein said blood vessel is the aorta.

4. (Original) The method of claim 2 wherein said blood vessel is the ascending aorta.

5. (Original) The method of claim 1 wherein said stiffened portion of said blood vessel is a grafted synthetic portion of said blood vessel.

6. (Original) The method of claim 5 wherein said grafted synthetic portion is a woven polyester graft.

7. (Previously Presented) The method of claim 1 wherein said stiffened portion of said blood vessel is in a stiffened and dilatated state prior to treatment.

8. (Previously Presented) The method of claim 1 wherein said membrane is in the form of a sheet, said stiffened portion of said blood vessel being encased by wrapping said membrane sheet around the circumferential periphery of said stiffened portion of said blood vessel and securing opposing end portions of said membrane.

9. (Previously Presented) The method of claim 8 wherein said membrane sheet is wrapped around the entire circumferential periphery of said stiffened portion of said blood vessel portion.

10. (Previously Presented) The method of claim 8 wherein said membrane sheet is wrapped about a majority of the circumferential periphery of said stiffened portion of said blood vessel.

11. (Original) The method of claim 8 wherein the opposing end portions of said membrane sheet are secured by suturing.

12. (Original) The method of claim 8 wherein the opposing end portions of said membrane are secured by way of a clamp.

13. (Original) The method of claim 8 wherein the opposing end portions of said membrane are secured by welding.

14. (Original) The method of claim 8 wherein the opposing end portions of said membrane are secured by way of interlocking structures formed on, or fixed to, each of said opposing end portions.

15. (Original) The method of claim 8 wherein each opposing end portion is provided with a marking extending generally parallel with a free end edge of said end portion, said end portions being secured along or adjacent to said markings.

16. (Original) The method of claim 8 wherein said membrane sheet is formed by slitting a cylindrical membrane.

17. (Previously Presented) The method of claim 1 wherein said membrane is in the form of a spiral, said stiffened portion of said blood vessel being encased by spirally wrapping said membrane spiral around the circumferential periphery of said stiffened portion of said blood vessel.

18. (Original) The method of claim 1 wherein said membrane has a stiffness approximating that of a non-stiffened blood vessel of the type of blood vessel being treated.

19. (Original) The method of claim 1 wherein said membrane has a measurement of tensile stiffness x thickness of between 25 and 2500 N/m.

20. (Original) The method of claim 19 wherein said measurement of tensile stiffness x thickness is between 50 and 1000 N/m.

21. (Original) The method of claim 8, wherein said membrane, when formed into a cylinder having an internal diameter of 20 mm, has an average pressure-strain elastic modulus of between 0.15×10^6 and 15×10^6 dyn/cm^2 at a pulsatile pressure of 120/70 mmHg (16/9 kPa).

22. (Original) The method of claim 8, wherein said membrane, when formed into a cylinder having an internal diameter of 20 mm, has an average pressure-strain elastic modulus of between 0.3×10^6 and 6×10^6 dyn/cm^2 at a pulsatile pressure of 120/70 mmHg (16/9 kPa).

23. (Original) The method of claim 1 wherein said external diameter of said stiffened portion of said blood vessel is reduced by between 10% and 50% when encased with said membrane, at a pressure of 70 mmHg (9 kPa).

24. (Previously Presented) The method of claim 4 wherein said external diameter of said stiffened portion of said blood vessel is reduced to between 18 mm and 30 mm at a pressure of 70 mmHg (9kPa).

25. (Previously Presented) The method of claim 1 wherein said membrane is formed of an elastic silicon polymer.

26. (Previously Presented) The membrane of claim 1 wherein said membrane is formed of an elastic polyurethane.

27. (Previously Presented) The method of claim 1 wherein said method is carried out thoracoscopically.

28. (Previously Presented) A method of treating a blood vessel, said blood vessel having a native tissue portion and a synthetic portion grafted in line with said native tissue portion, said synthetic portion having a greater stiffness than the stiffness of said native tissue portion, said method comprising at least substantially encasing said synthetic portion with an elastic membrane formed of biocompatible material such that said membrane engages said synthetic portion to thereby reduce the external diameter of said synthetic portion, passively carry at least a portion of blood pressure loads acting on said blood vessel throughout systole and diastole and reduce the effective stiffness of said synthetic portion of said blood vessel, said elastic membrane having a stiffness less than the stiffness of said synthetic portion of said blood vessel.

29. (Previously Presented) The method of claim 28 wherein said synthetic portion is a woven polyester.

30. - 67. (Cancelled)